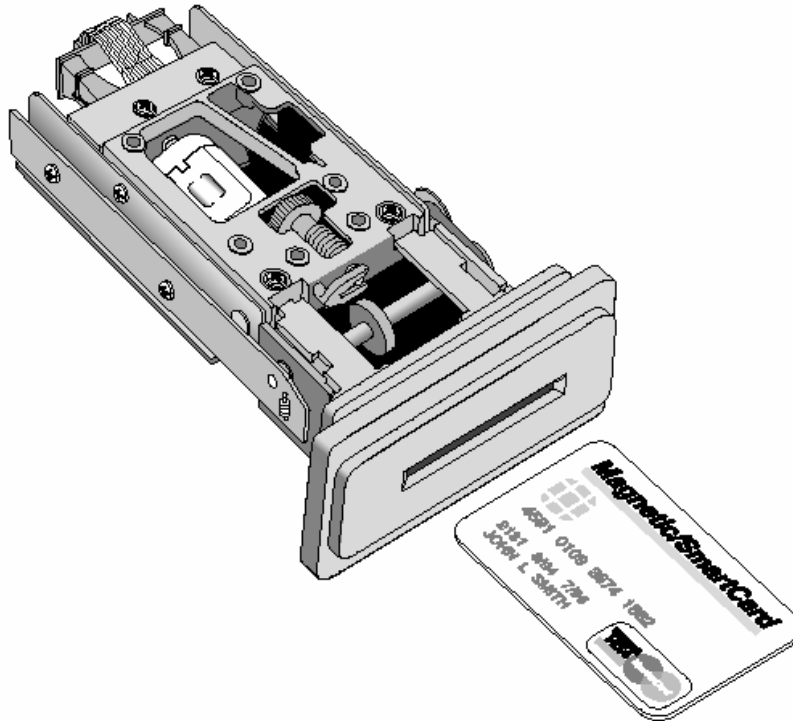


ASEDrive IIIe MT

Intelligent Motorized PC/SC Smart Card reader with
USB or Serial interface and Multi-peripheral support

Technical Reference Manual

Version 1.10
March 9, 2005



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Revisions

Rev Number	Date	Notes
1	24 December, 2004	Initial Release Version 1.00
1.1	9 March, 2005	Updates to Figure 5, added information about USB Interface, Updated Regulatory and Safety Information

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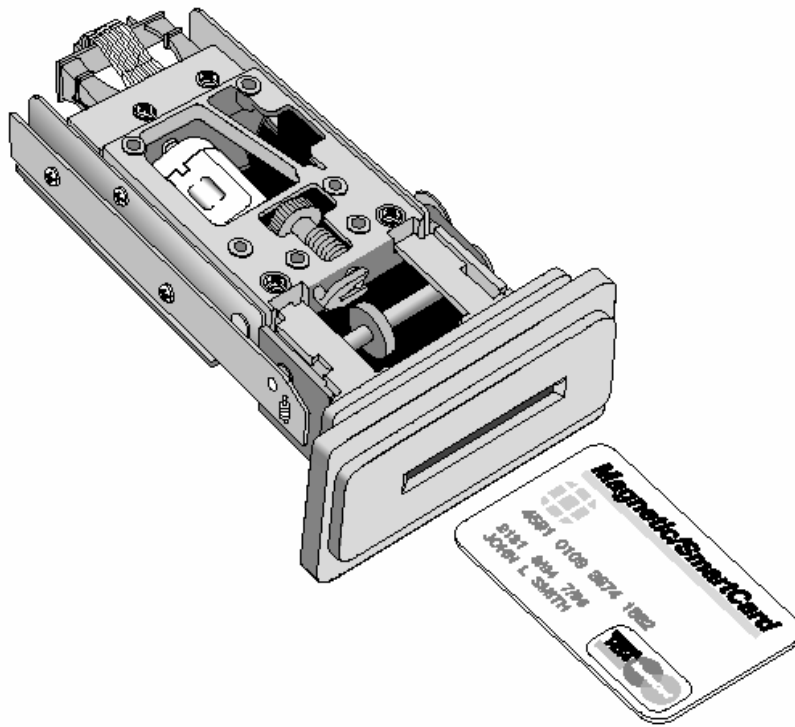


Figure 1 – ASEDrive IIIe MT (Top View)

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INTRODUCTION

ASEDrive IIIe MT is an intelligent motorized PC/SC smart card reader. ASEDrive IIIe MT provides full PC/SC functionality with automatic functionality of the motorized acceptor, without requiring further programming. In addition to the automatic operation, the motorized acceptor can be controlled manually and various peripherals can be utilized through simple PC/SC IOCTLs. The ASEDrive IIIe MT is micro controller based, and is utilizing easily upgradeable Flash memory.

CONFIGURATIONS

Table 1 - ASEDrive IIIe MT Configurations

Athena Part #	Description
A16050301	ASEDrive IIIe MT reader motorized Chassis, “D” Bezel, and Screw Set.
A16050330	Motorized Chassis – No Bezel
A16035527	“D” Bezel with Screw Set (3 screws)

STANDARD FEATURES

- Advanced smart card reader with standard PC/SC interface.
- Support of ISO7816 CPU cards, I2C and XI2C, 2-bus and 3-bus memory cards.
- Automatic and manual motorized acceptor operation.
- Support for up to 4 inputs and 2 relay outputs with IOCTLs.
- 3 Status LEDs on board.
- Front Card Gate.
- Motorized Transport
- USB and RS-232 Interfaces
- Flash upgradeable from the host PC.

SMART CARD READER

The ASEDrive IIIe MT includes a high performance, PC/SC compatible smart card reader supporting ISO7816 and EMV CPU cards and memory cards.

FRONT CARD GATE

Front Card Gate prevents coins, dust, moisture, and debris, from entering the unit – gate resists opening except when ISO-size card enters the unit.

MOTORIZED TRANSPORT

The Reader has a command-driven motorized transport. The transport keeps the card from the user during a transaction but returns the card when the transaction is completed.

USB AND RS-232 INTERFACES

The unit communicates to the host through a standard USB or RS-232 interface. When using RS-232, the unit is factory set to a baud rate of 115,200 bps.

FLASH UPGRADEABLE

The ASEDrive IIIe MT reader contains an advanced micro controller with 128KByte of program and data in Flash memory. The reader firmware and data can be updated remotely through the host PC.

Table 2 - Specifications

DATA FORMAT SPECIFICATIONS	
Reader Configuration	Data Format Specifications
Smart Card Functions	PC/SC, ISO 7816, I2C, XI2C, 2-bus, 3-bus
OPERATIONAL	
Card Speed	10IPS (25,4 cm/sec) typical
MTBF	Electronics: 125,000 hours SC contacts: 1,000,000 passes
ELECTRICAL	
Input Voltage	12.0 VDC \pm 5%
Current:	1.5A max 130mA typical (with motor off)
Relay #1	60 Vdc or 42.4 V peak (SELV) 2A
Relay #2	60 Vdc or 42.4 V peak (SELV) 2A
DATA COMMUNICATION	
COM	RS-232, 115,200 bps
USB	Full Speed 12Mbit/S
ENVIRONMENTAL	
Max Ambient Temperature	Operating: 32 °F to 122 °F (0° C to 50° C) Storage: -40 °F to 158 °F (-40° C to 70° C)
Humidity	Operating: 5% to 95% non condensing Storage: 5% to 95% non condensing
Altitude	Operating: 0-10,000 ft. (0-3,048 m.) Storage: 0-50,000 ft. (0-15,240 m.)
DIMENSIONS	
Length (with Bezel):	6.26" (159.00 mm)
Width (with Bezel)":	4.00" (101.60 mm)
Height (with Bezel):	2.17" (55.12 mm)
Weight:	
Reader with Bezel	16.40oz. (466.58 g.)

Environmental Note ▾

The ASEDrive IIIe MT reader is installed with a protective barrier to protect against dust, humidity, and foreign objects being inserted. However water or other liquids should not be sprayed directly on the card acceptance slot with a water hose or similar direct watering methods as they may damage the reader electronics.

HARDWARE INSTALLATION

MECHANICAL INSTALLATION

The ASEDrive IIIe MT reader has to be installed in a closed enclosure in order to protect it from the external elements.

The reader is assembled out of 3 main parts:

- Motorized Chassis with a front “A” bezel.
- PCB with the reader electronics and connectors.
- Front “D” Bezel.

See the drawing below:

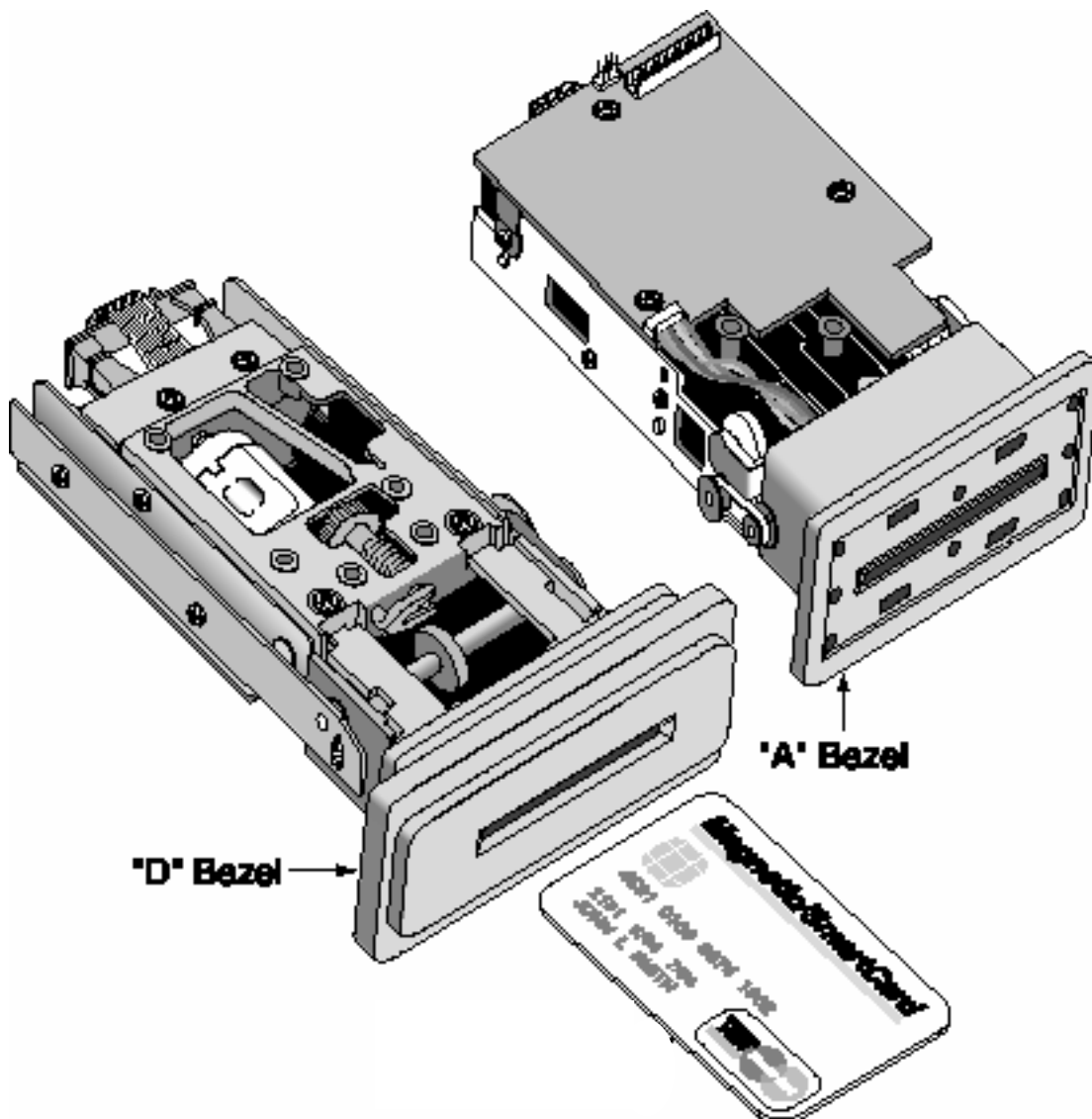


Figure 2 - Reader Configuration

MOUNTING THE READER

The reader is mounted with the PCB facing the bottom, using 4 mounting screws.

See figure below

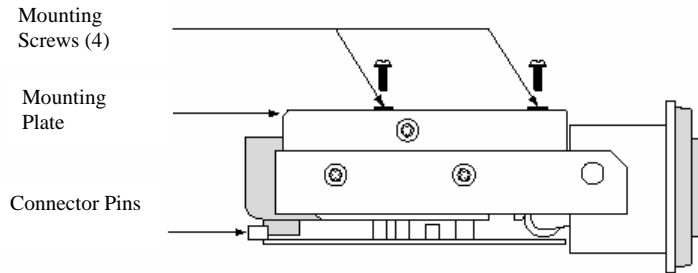


Figure 3 - Mounting the Reader

The ASEDrive IIIe MT reader should be mounted against a flat front panel.

The reader has two Bezels:

Bezel "A" is directly mounted on the motorized reader assembly (see Annex A).

Bezel "D" is mounted on Bezel "A" and is seen outside of the enclosure by the end user.

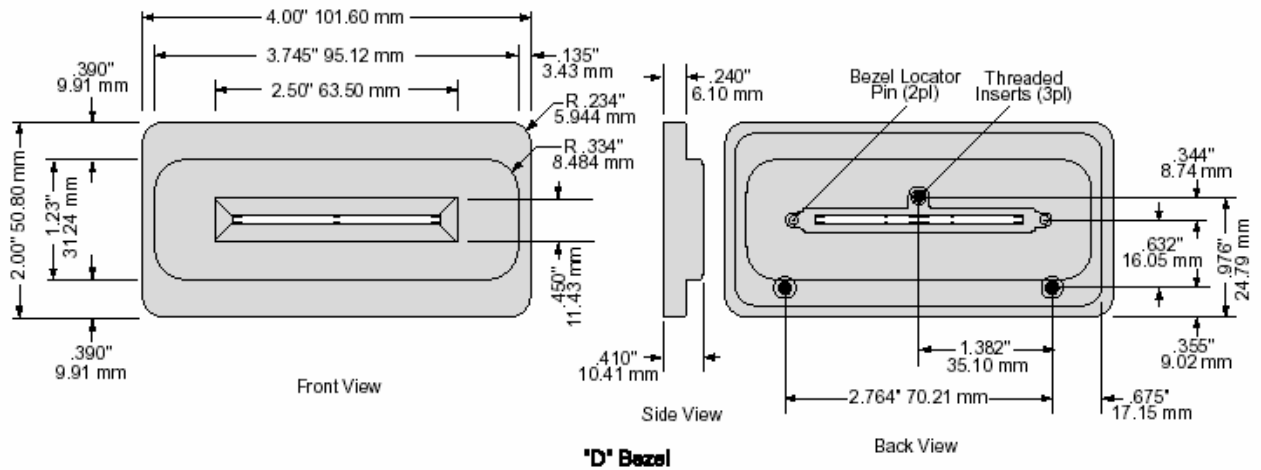


Figure 4 - The "D" Bezel

ELECTRICAL CONNECTIONS

In order to install the HTW reader, you will need the following parts:

1. ASEDrive IIIe MT reader.
2. UL listed adapter with rated output current 12 Vdc, 1.5A, classified Limited Power source.
3. 4 reader-mounting screws.
4. RS-232 Cable or USB Cable.

Note



Before connecting any external cable to the ASEDrive IIIe MT reader, make sure that the main AC line feeding the reader Power Supply is turned **off**. Please study the **Regulatory and Safety Notes** at the end of this document, before making any electrical connections to the reader.

Study Figure 5 – Connectors and LED locations on the following page, before connecting any external peripheral to the reader.

LED3
Power-On/Off

LED1
ON when reader is recognized by PC/CS, flashes during communication.

LED2
On, when card is inserted.

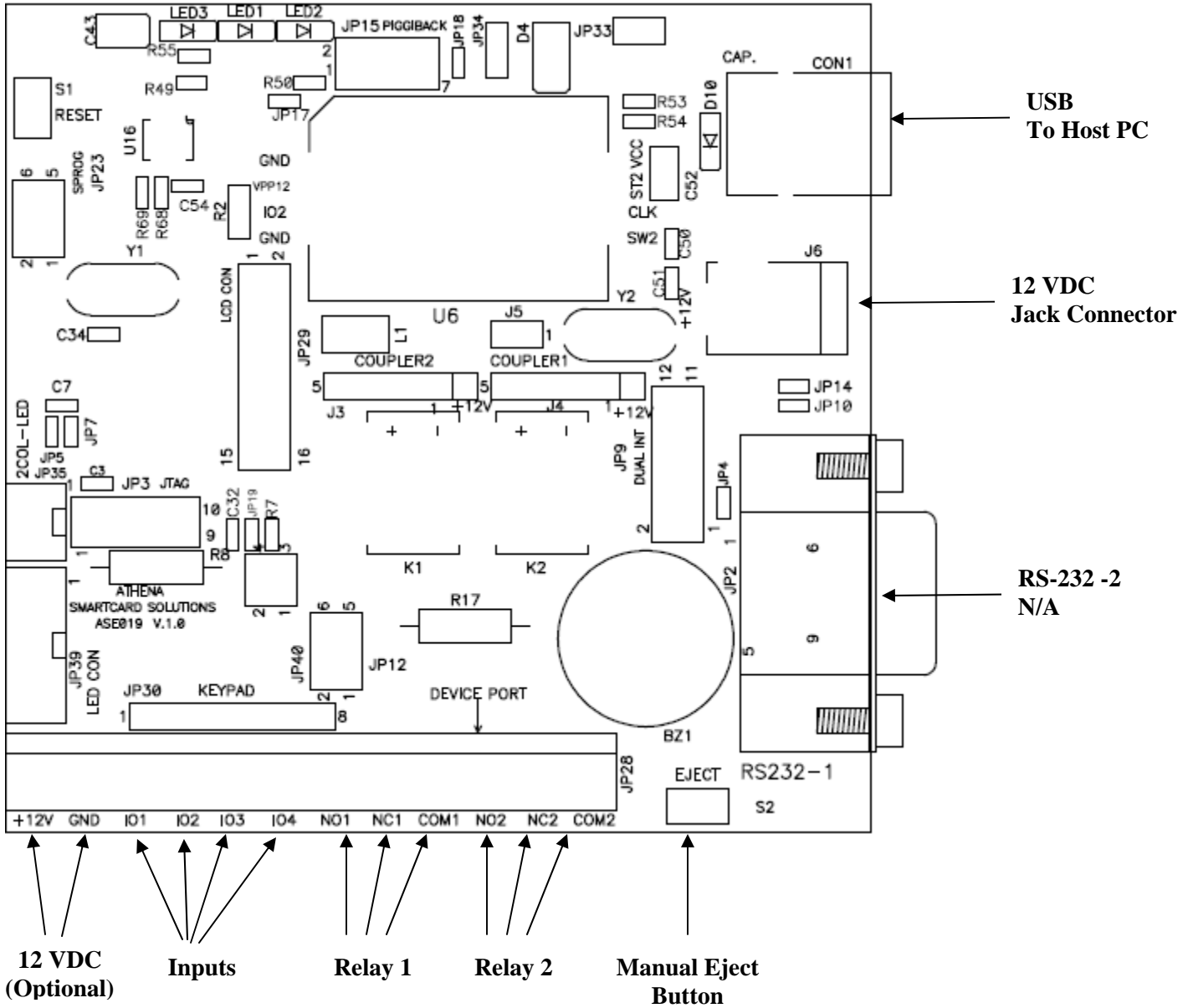


Figure 5 - Connectors and LED locations

READER DRIVER INSTALLATION

The ASEDrive IIIe MT latest Device Driver can be located at:

<http://www.athena-scs.com/downloads>

1. Make sure the USB or RS-232 cable from the reader is connected to the Host PC.
2. Check that the reader is powered on (LED 3 is on).
3. Run the driver Setup utility.
4. Follow the instructions on the screen to complete the reader installation. There is no need to disconnect the reader, when instructed so.

ANNEX A - MECHANICAL DRAWINGS

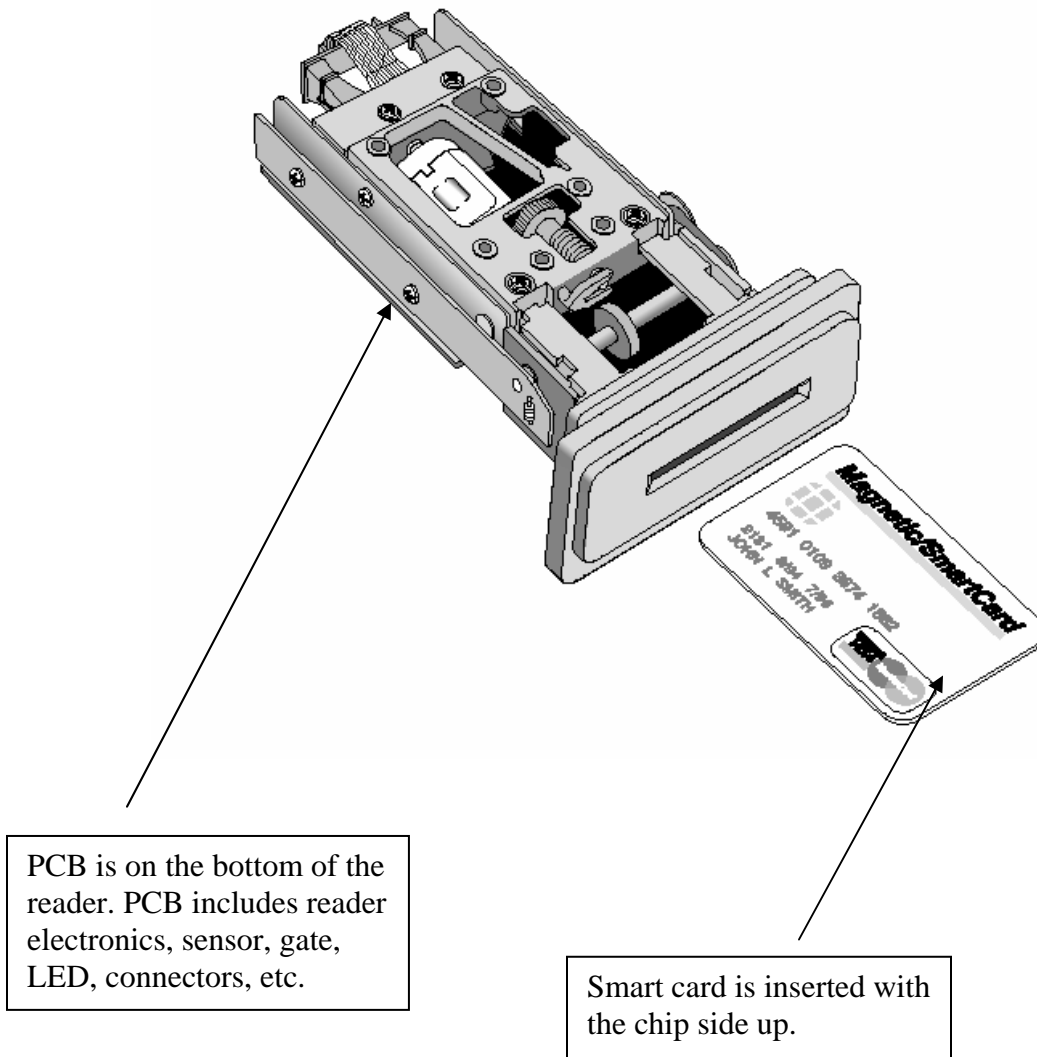


Figure A-1 - ASEDrive IIIe MT General View

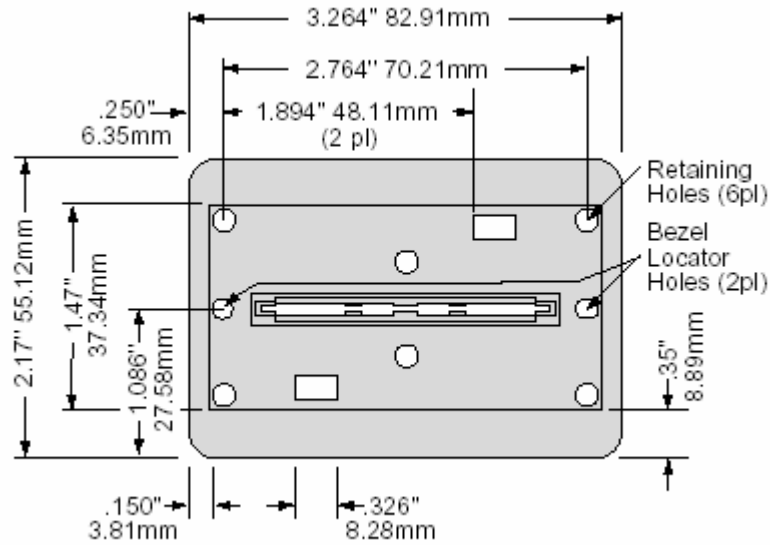


Figure A-2 - Bezel "A" Front View

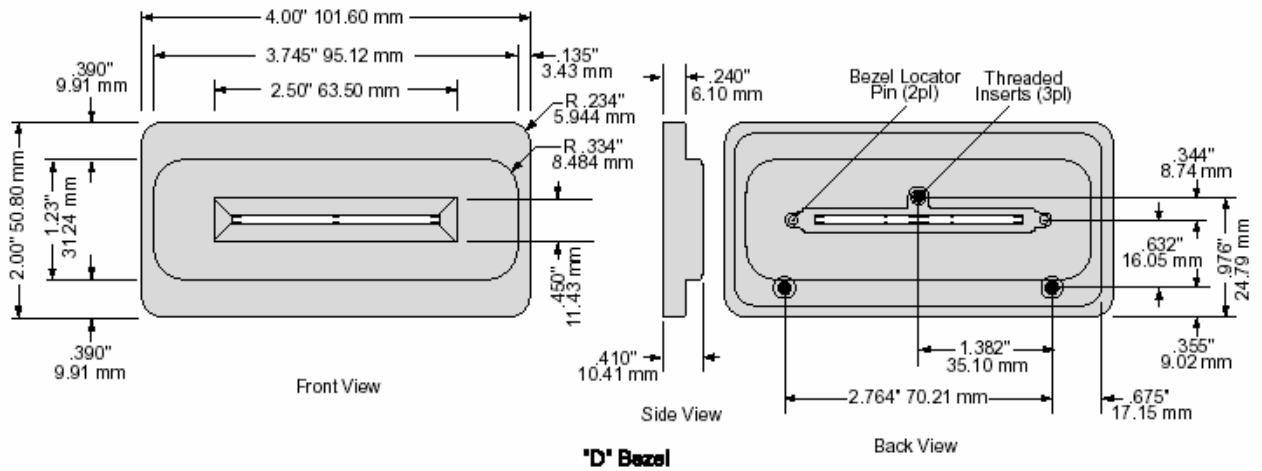


Figure A-3 - Bezel "D" All Views

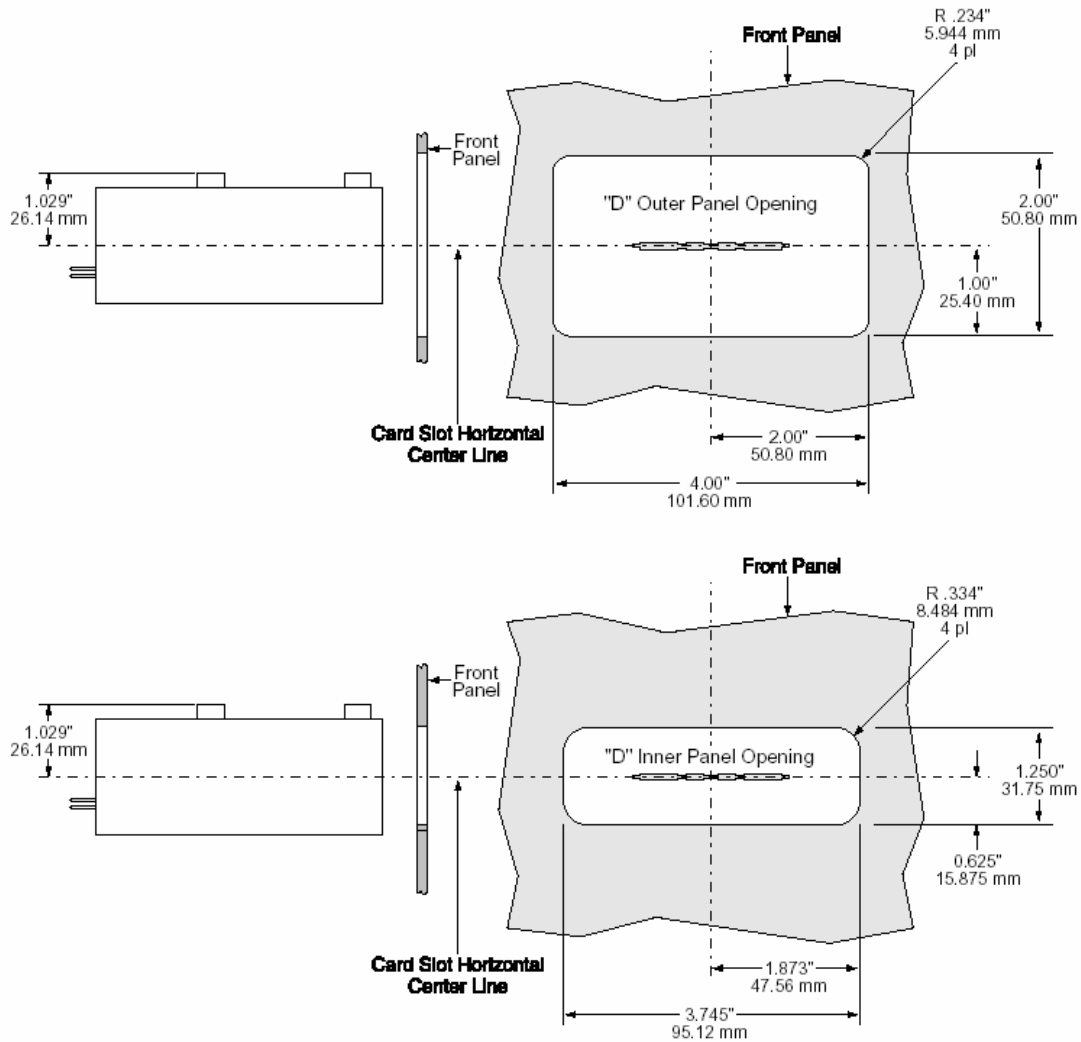
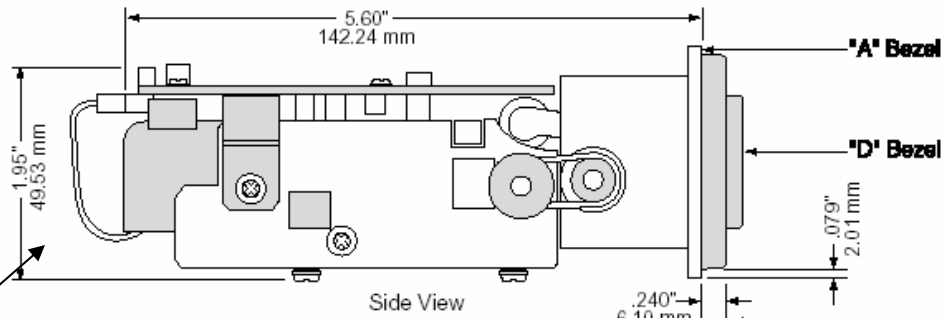
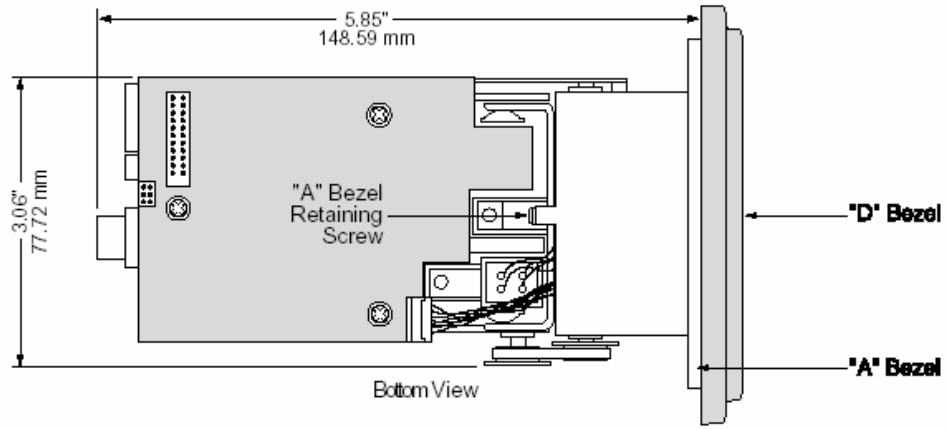


Figure A-4 - Panel Opening for Mounting Reader

Note ▾

The “D” Bezel has two panels, a smaller inner panel or larger Outer panel. According to which Panel has to protrude from the Front Panel, you can choose the opening in the panel.



Please note, this view is upside down, When mounted, the PCB should be on bottom.

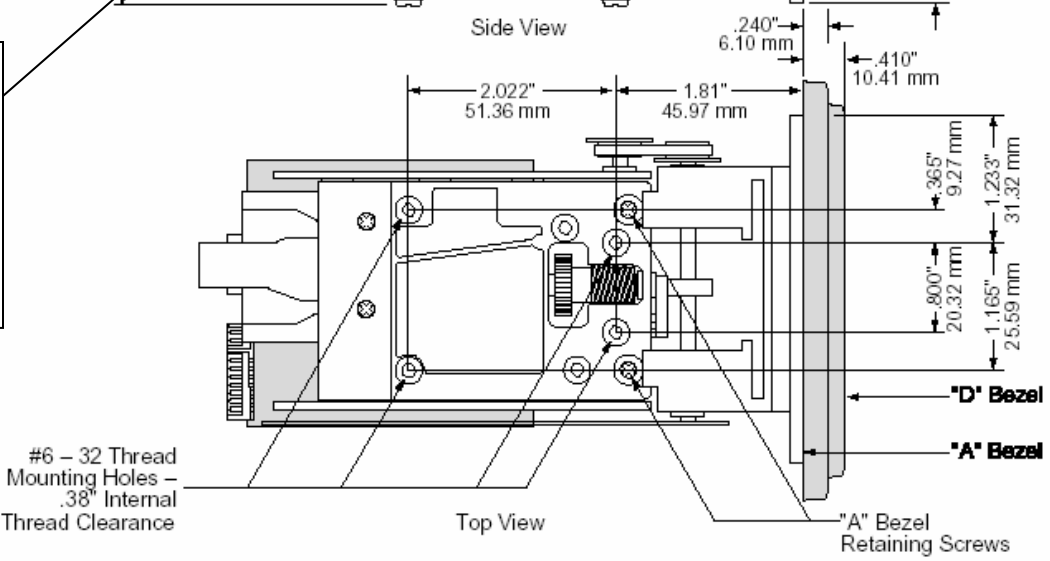


Figure A-5 - Reader Dimensions

REGULATORY AND SAFETY NOTES

The external circuits connected to JP28 terminal should not be more than 60 Vdc or 42.4 V peak (SELV);

Over current protection should be provided in the circuit of dry contacts of relay K1, K2;

The unit should be connected to UL listed adapter with rated output current 12 Vdc, 1.5A, classified Limited Power source;

Maximum ambient temperature of the equipment operation is 50C

End User shall provide mechanical enclosure in accordance with EN 60950-1 standard.

TECHNICAL SUPPORT

The latest software drivers can be found at: <http://www.athena-scs.com/downloads>

Athena Technical Support e-mail: techsup@athena-scs.com

Athena Smartcard Solutions - Japan
6F Marutaya Bldg., 6-9 Yokoyamacho
Hachioji, Tokyo 192-0081
Japan
Tel: +81-426-60-7555
Fax: +81-426-60-7106

Athena Smartcard Solutions – Israel
11 Hamenofim St.
Herzliya 46733
Israel
Tel: +972-9-9517550
Fax: +972-9-9517551